

1787 Sentry Parkway West Building 18, Suite 120 Blue Bell, PA 19422 PH 267.464.2800 FAX 267.401.1554 www.geosyntec.com

## Memorandum

Date: November 6, 2012

To: Jill McKenzie – New Jersey Department of Environmental Protection

Copies to: Dave Barsky - New Jersey Department of Environmental Protection

Dawn Horst – Ingersoll Rand Company

From: Mike Lambert, Scott Drew, LSRP - Geosyntec Consultants

Subject: Soil Remediation Standard

On behalf of Ingersoll Rand Company (Ingersoll Rand), Geosyntec has prepared this Technical Memorandum regarding the Soil Remediation Standard (SRS) for beryllium in soil to be used in the ongoing environmental cleanup at the former Ingersoll Rand facility in Phillipsburg, New Jersey (PI#012833). Specifically we are seeking to gain New Jersey Department of Environmental Protection (NJDEP) concurrence that beryllium is a naturally occurring element in Site soils and therefore not subject to remediation at concentrations that are consistent with background conditions. Based on the 2004 <u>Site History Report</u> which documents the operational history at the former facility, beryllium is not considered a contaminant of concern at the site.

Beryllium has typically been detected in soil at levels above the default Impact to Groundwater Soil Screening Level (IGWSSL) of 0.5 mg/kg, established in NJDEP Guidance dated December 2008. This value is based on a practical quantitation level (PQL) and is below the previously approved Alternate Remedial Concentration (ARC) of 16 mg/kg approved for the site in a January 25, 2005 letter (Attachment 1).

The background investigation approach presented herein is consistent with the following NJDEP regulations and guidance:

- Site investigation natural background investigation of soil and ground water presented in the Technical Requirements for Site Remediation (TRSR), N.J.A.C 7:26E-3.8; and,
- Soil Investigation Technical Guidance Site Investigation/Remedial Investigation/ Remedial Action (SI/RI/RA) published by NJDEP on 21 February 2012;

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The farm parcels associated with the Site have been selected as the natural background reference area for this evaluation; their location is shown on Figure 1. A Preliminary Assessment (PA) and a Site Investigation were conducted for these parcels in 2005 and identified the following:

- The parcels have not been affected by historic site operations and no observed or suspected discharges were present;
- A limited number of AOCs were identified during the PA, in accordance with the TRSR, which relate to surface water drainage features. No impacts were associated with these AOCs and No Further Action letters were issued by the NJDEP in 2002 based on the January 2002 South Side AOC Remedial Investigation Report. A copy of the NFA letter is provided in Attachment 2 to this letter;
- The physical properties of soils present in the farm parcel are consistent with naturally occurring soils present across the Site as shown in the attached boring logs (Attachment 3).

The above information was provided in the <u>Preliminary Assessment Report, Farm and Undeveloped Parcels, Ingersoll Rand Company Facility, Phillipsburg, Warren County, New Jersey</u> and the <u>Site Investigation Report – Farm and Undeveloped Areas of the Former Ingersoll Rand Co. Facility – Phillipsburg, New Jersey</u>. These documents were submitted to the NJDEP in July 2004 and December 2005 respectively and no response has been received from the NJDEP.

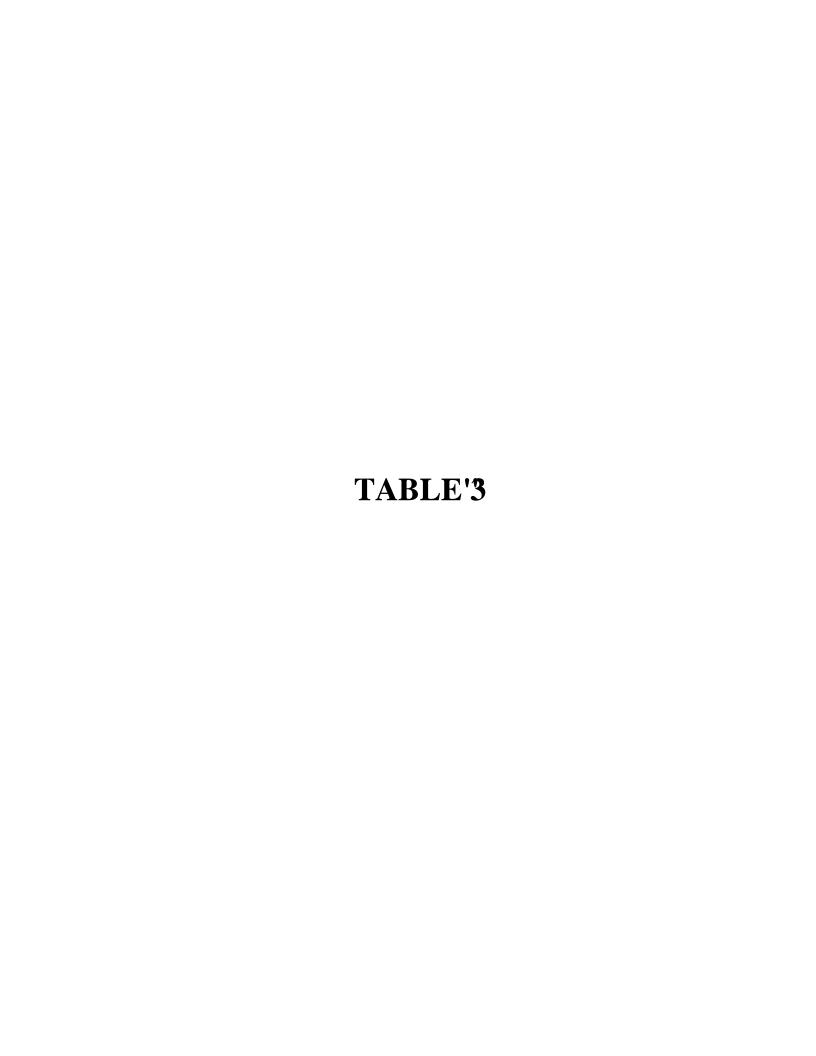
As part of the farm parcel SI a total of 28 samples were collected from surface soils up to 2.5 feet below ground surface. The samples were analyzed for trace metals, including beryllium. The results of these samples are presented on Table 1 and the following observations are made from these data:

- Beryllium was detected in 27 of the 28 samples with a range of 0.54 to 3.10 mg/kg. The one non-detectable concentration had a reporting limit of 0.61 mg/kg.
- Of the 27 detections the 25<sup>th</sup> percentile is 0.84 mg/kg and the 75<sup>th</sup> percentile is 1.50 mg/kg. The calculated outlier concentration is 2.49mg/kg, therefore the highest detected concentrations of 3.10 is a statistical outlier and not considered representative of background.
- A maximum background concentration of 2.10 mg/kg is apparent based on this evaluation.
- The spatial distribution of beryllium in the farm field soils is not indicative of a concentration gradient typically associated with a discharge as shown on Figure 1.

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These concentrations are equivalent to ranges reported for beryllium in natural soils in the Highlands (reference) as referenced in the 2003 <u>Ambient Levels of Metals in New Jersey Soils</u> developed by NJDEP research scientist Paul Sanders, Ph.D.

Based on this evaluation of natural background, it is recommended that concentrations of beryllium less than or equal to 2.10 mg/kg be considered to be due to natural background of this element in soil. Concentrations less than this level will not require remedial action, including engineering and institutional controls and site specific impact to groundwater evaluations.



# Table 1 Farm Field Beryllium Results Former Ingersol Rand Facility Phillipsburg, NJ

Sample Location	Sample Date	Sample Depth- Top (ft)	Sample Depth- Bottom (ft)	Sample Result (mg/kg)		
L10	5/4/2005	1.5	2	ND (RL= 0.61)		
L23	5/9/2005	1.5	2	0.54		
L05	5/3/2005	1.5	2	0.69		
L01	5/3/2005	1.5	2	0.71		
L07	5/4/2005	1.5	2	0.71		
L15	5/6/2005	1.5	2	0.72		
L03	5/3/2005	1	1.5	0.77		
L04	5/3/2005	1	1.5	0.80		
L25	5/5/2005	1.5	2	0.87		
L20	5/5/2005	1.5	2	0.88		
L11	5/5/2005	1.5	2	0.90		
L02	5/3/2005	1.5	2	0.95		
L18	5/5/2005	1.5	2	0.96		
L09	5/4/2005	2	2.5	1.00		
L12	5/4/2005	1.5	2	1.00		
L13	5/4/2005	1.5	2	1.00		
L19	5/6/2005	1.5	2	1.00		
L21	5/6/2005	2	2.5	1.00		
L22	5/9/2005	1.5	2	1.10		
L14	5/5/2005	2.5	2.5	1.20		
L06	5/4/2005	1.5	2	1.50		
L16	5/4/2005	1.5	2	1.50		
L26	6/23/2005	0	0.5	1.70		
L08	5/4/2005	1.5	2	1.80		
L28	6/23/2005	0	0.5	1.90		
L17	5/5/2005	2.5	2.5	2.00		
L24	5/6/2005	1.5	2	2.10		
L27	6/23/2005	0.5	1	3.10		
25th percentile detec	25th percentile detected data 0.84					
75th percentile detec	cted data			1.50		

### Notes:

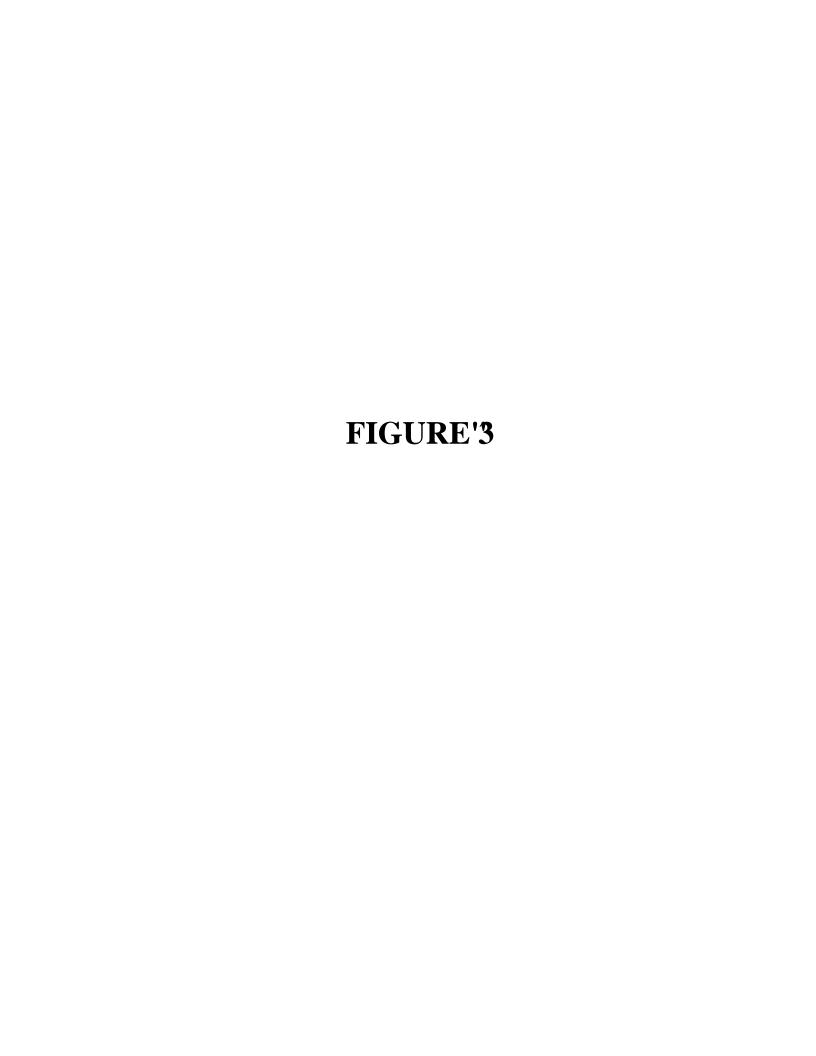
Statistical outliers based on 25th and 75th percentile.

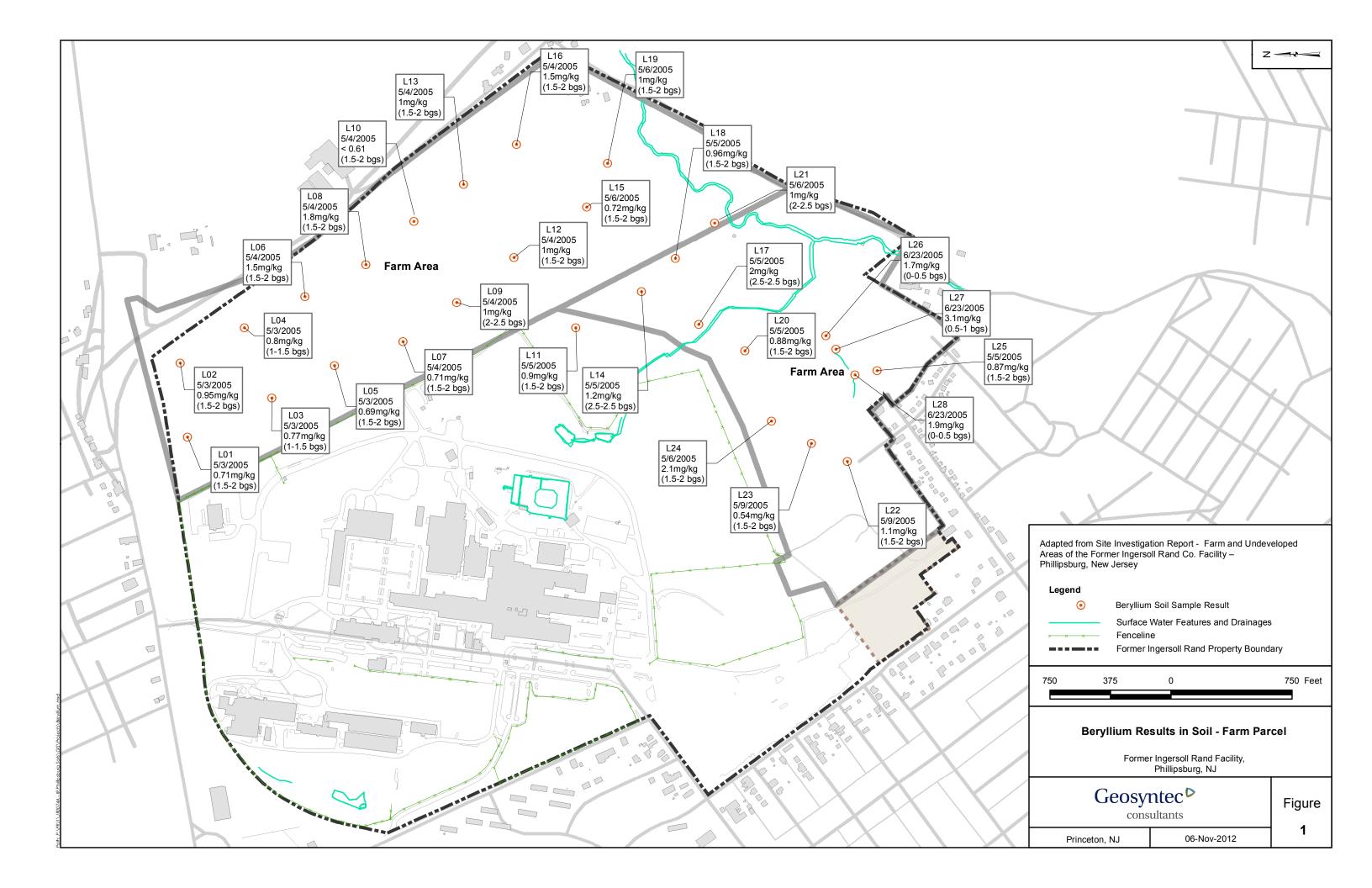
Maximum concentration not considered statistical outlier is 2.49 mg/kg based on NJDEP *Soil Investigation Technical Guidance* , February 21, 2012

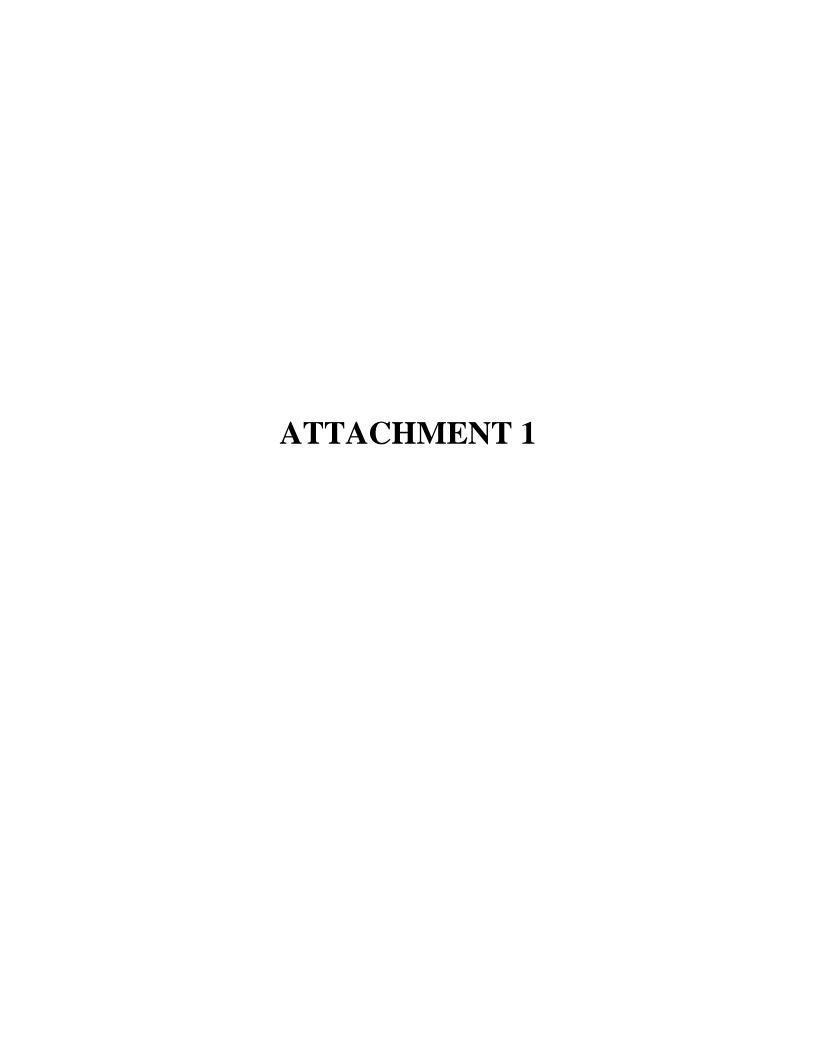
Data collected as part of farm field parcel site investigation and presented in:

Site Investigation Report – Farm and Undeveloped Areas of the Former

Ingersoll Rand Co. Facility –Phillipsburg, New Jersey









State of New Jersey

Department of Environmental Protection

Office of Brownfield Reuse P.O. Box 028 401 East State Street, 6<sup>th</sup> floor Trenton, New Jersey 08625-0028 Telephone: (609) 292-1251 Facsimile: (609) 777-1914 File: 03710-Pburg- 7, [
P-burg Site File
G:Micalizio S. Surman
C.Venezia
N.Oliveira

Bradley M. Campbell Commissioner

January 25, 2005

Richard J. Codey

Acting Governor

Dave Sordi, P.E., Manager Ingersoll Rand Corporation Environmental Engineering Ingersoll Rand Corporate Center 70 North Street Torrington, CT 06790

Re: Ingersoll Rand Site

Administrative Order dated March 31, 1994, last amended August 12, 2004

942 Memorial Drive Phillipburg, Warren County

Soil Reuse Proposal Dated December 2004

Dear Mr. Sordi:

The New Jersey Department of Environmental Protection (Department) has completed the review of the above referenced document. Based upon a review of the information submitted, the above referenced report is acceptable as conditioned below.

- The Department concurs with the proposal to the excavate sludge material (approximately 2,000 cubic yards) from AOC-2 for off-site disposal.
- 2. The Department has established an Alternative Remediation Criterion (ARC) for beryllium at the site. The ARC is based on the revised beryllium toxicity data in USEPA's Integrated Risk Information (IRIS) database, the source of toxicity information employed by NJDEP for many of its soil remediation criteria. An ARC of 16 milligrams per kilogram (mg/kg) for beryllium is valid for this site. Please note that concentrations of beryllium were reported to be below the ARC at all three Areas of Concern (AOCs). Consequently, no constituents of concern (COCs) were identified in the former soil stockpile cover material (approximately 1,000 cubic yards) used at AOC-2 (Spray Pond Sludge Disposal Area).
- 3. The only remaining COC at AOC-36 was arsenic with reported concentrations (20.9 34.3 mg/kg) slightly above the Residential Direct Contact Soil Cleanup Criteria (RDCSCC) of 20 mg/kg. ENSR and Ingersoll Rand has the option of demonstrating that the arsenic concentrations are due to natural background per the Technical Requirements for Site Remediation (N.J.A.C 7:26E), specifically 7:26E3.10 (Site Investigation Background Investigation in Soil).

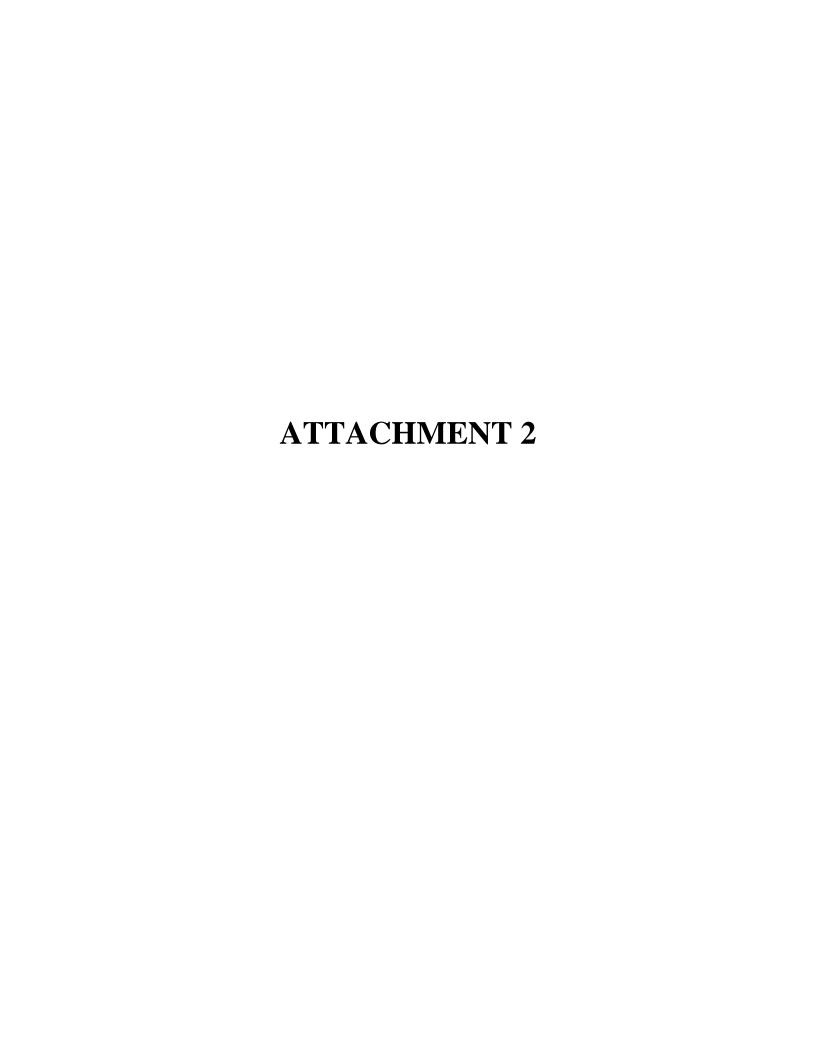
- 4. Based on results presented in the Soil Reuse Proposal AOCs 2, 5, & 36, The Department would prefer the soil from AOC-2 (1,000 cubic yards) and AOC-36 (950 cubic yards) to be reused as backfill at the inverse ponds (AOC-31) rather than soil from AOC-5 (approximately 2,500 cubic yards). Soil samples collected from the AOC-5 soil stockpiles were reported to contain elevated concentrations of polycyclic aromatic hydrocarbons (PAHs), copper, lead, and selenium. This soil should be considered for reuse as landfill daily cover/cap material.
- The Division of Solid Waste and Hazardous Waste, Bureau of Landfill Compliance and Recycling Management should be contacted regarding any future landfill operation and closure issues.

If you should have any questions regarding this matter, please contact Gary Sanderson, Case Manager, of the Office of Brownfield Reuse at (609) 633-0544.

Sincerely,

Gary Sanderson, Case Manager Office of Brownfield Reuse

c: Ken Kloo, NJDEP/OBR
David Doyle, NJDEP/BEERA
David Froehlich, NJDEP/ BGWPA
Gregg R. Micalizio, ENSR
John Hawk, Warren County Health Department
Municipal Clerk, Phillipsburg Town



037/0-153-07.3

James E. McGreevey

Governor

Department of Environmental Protection

Bradley M. Campt Commissioner

Aaron Kleinbaum
Assistant General Counsel and Director of Environmental Health & Safety
Ingersoll-Rand Company
200 Chestnut Ridge Road
Woodcliff Lake, NJ 07675

11/1/1/1/2002

Dear Mr. Kleinbaum:

Re:

South Side AOC Remedial Investigation Report Response to April 9, 2002 Response to Comments

Ingersoll Rand Site

Phillipsburg Twp., Warren County

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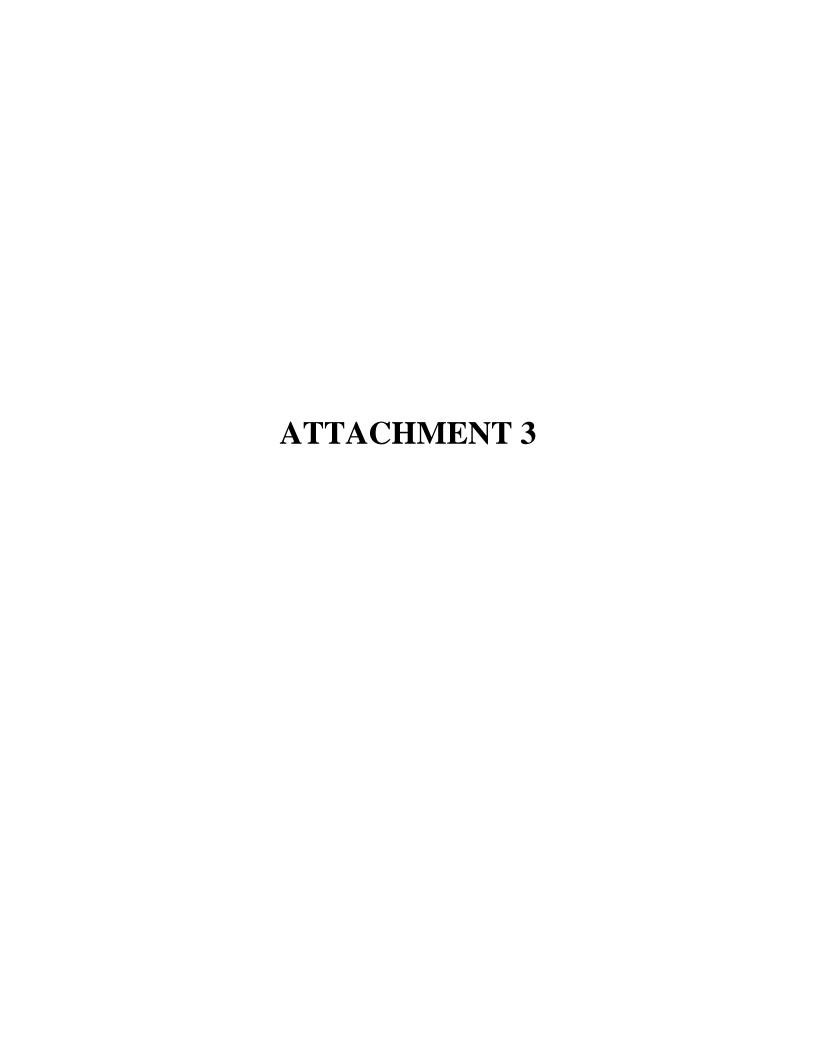
The New Jersey Department of Environmental Protection (NJDEP) has reviewed the aforementioned correspondence and approves Ingersoll-Rand responses. All changes (i.e., inclusion of Appendix B, Final Ecological Evaluation and Draft Deed Notice) shall be included in a revised document so that all changes are consolidated in one report. The NJDEP is also in agreement with Ingersoll Rand that "No Further Action" for AOC's 3A, 3B, 26 and 27 are appropriate.

If you have any questions concerning this correspondence, please call me at (609)-633-7237.

Sincerely,

Bob Marcolina, Case Manager Bureau of Case Management

c: Christopher Venezia, ENSR Dave Froehlich, DPFSR/BGWPA



INTERNATIONAL	Client: Ingersoll Rand Site: Former IR Facility - Phillipsbu	ıra N.I	BORIN	
Start Date: 5/10/2005	Project: Farm Area Investigation		Page: 1 of	
End Date: 5/10/2005	Coordinates: X-680066.5 Y-308188  Elevation: 334.99  Drill Subcontractor: N/A	.79	Geologist:	NI/A
Depth (ft) Lithology	Description	PID	Sample ID	Sample Parameters
	LT: Brown Clayey SILT, Little Coarse Gravel, Roots Organic Matter		K0101.0	Arsenic
	LAY: Light Brown Silty CLAY, Litlte Coarse Gravel		K0102.5	Arsenic

ENISD	Client: Ingersoll Rand		BORII	NG ID:
INTERNATIONAL	Site: Former IR Facility - Phillipsburg, NJ		K	02
Start Date:	Project: Farm Area Investigation		Page: 1 o	f 1
5/10/2005	Coordinates: X-677483.22 Y-30955	5.15	Depth of E	Boring: 3.00
End Date:	Elevation: 262.19		Geologist	R. Freeman
5/10/2005	Drill Subcontractor: N/A		Driller:	N/A
Debty (4) rithology	Description	PID	Sample ID	Sample Parameters
	ILT: Brown Clayey SILT, Litlte Coarse Gravel, Roots Organic Matter		K0201.0	Arsenic
2+ S	ILT: Brown Clayey SILT, Trace Coarse Gravel			
<del></del>	ILT: Light Brown Clayey SILT, Trace Coarse Gravel		K0202.5	Arsenic

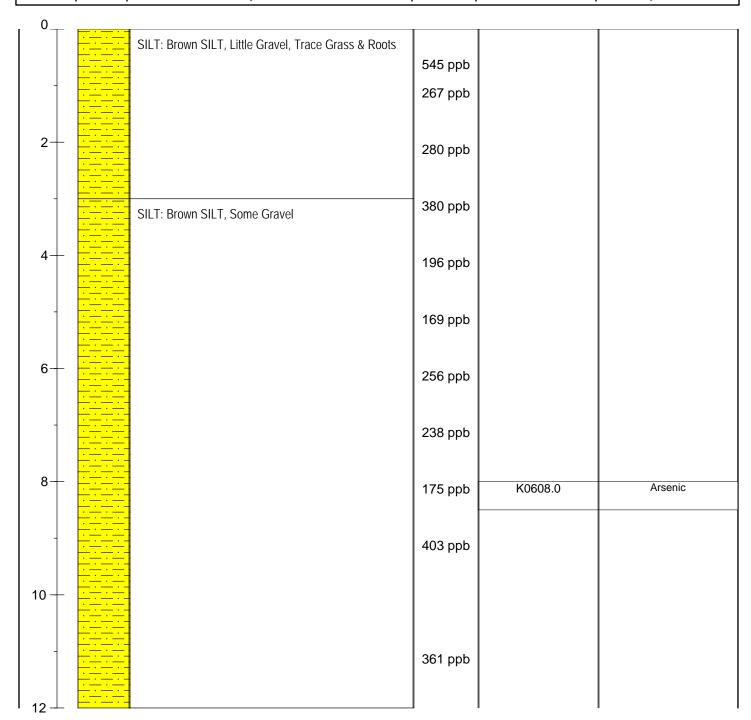
ENCD	Client: Ingersoll Rand			BORIN	IG ID:
INTERNATIONAL	Site: Former IR Facility - Phillipsburg, NJ		K03		
Start Date:	Project: Farm Area Investigation			Page: 1 of	1
5/10/2005	Coordinates: X-676733.13 Y-309364.	18		Depth of B	oring: 2.50
End Date:	Elevation: 252.53			Geologist:	R. Freeman
5/10/2005	Drill Subcontractor: N/A			Driller:	N/A
Depth (ft) Lithology	Description	PID	Sal	uble ID	Sample Parameters
	SILT: Brown Clayey SILT, Trace Coarse Gravel, Roots				
<u> </u>	& Organic Matter		K	0300.5	Arsenic
	SILT: Brown Clayey SILT, Trace Coarse Gravel				
2-	CLAY: Light Brown Silty CLAY, Trace Coarse Gravel		K	0301.5	Arsenic

ENCD	Client: Ingersoll Rand		BORIN	G ID:
INTERNATIONAL	Site: Former IR Facility - Phillipsburg, N	IJ	KO	)4
Start Date:	Project: Farm Area Investigation		Page: 1 of	1
5/10/2005	Coordinates: X-676268.93 Y-309053.36		Depth of B	oring: 2.50
End Date:	Elevation: 250.52		Geologist:	R. Freeman
5/10/2005	Drill Subcontractor: N/A		Driller:	N/A
Depth (ft) Lithology	Description P	(D)	mple ID	Sample Parameters
	SILT: Dark Brown Clayey SILT, Trace Roots & Organic Matter	К	0400.5	Arsenic
· · · · · ·	SILT: Brown Clayey SILT, Trace Coarse Gravel			
2+	SILT: Light Brown Clayey SILT, Trace Coarse Gravel		0402.0	Arsenic
	CLAY: Light Brown Silty CLAY, Trace Coarse Gravel		0402.0	Alseille

ENCD	Client: Ingersoll Rand		BORIN	G ID:
INTERNATIONAL	Site: Former IR Facility - Phillipsbu	rg, NJ	K0	)5
Start Date:	Project: Farm Area Investigation		Page: 1 of	1
5/10/2005	Coordinates: X-676523.32 Y-308564	06	Depth of Bo	oring: 3.00
End Date:	Elevation: 259.84		Geologist:	R. Freeman
5/10/2005	Drill Subcontractor: N/A		Driller:	N/A
Depth (ft) Lithology	Description .	PID	ample ID	Sample Parameters
	LT: Brown Clayey SILT, Trace Coarse Gravel, Roots Organic Matter		K0501.0	Arsenic
	_AY: Light Brown Silty CLAY, Trace Coarse Gravel		K0502.5	Arsenic

INTERNATIONAL DE	Client: Ingersoll Rand Site: Former IR Facility - Phillipsbu	ra. NJ		BORIN	
Start Date: 5/9/2005	Project: Farm Area Investigation  Coordinates: X-675728.75 Y-306767.	Project: Farm Area Investigation		Page: 1 of 1 Depth of Boring: 2.50	
End Date: 5/9/2005	Elevation: 336.77  Drill Subcontractor: N/A	7 1		Geologist: Driller:	R. Freeman
Debty (41) Tityology	Description	PID	Sar	mple ID	Sample Parameters
	ILT: Brown Clayey SILT, Litlte Coarse Gravel, Roots Organic Matter			0601.0	Arsenic
2+	ILT: Light Brown Clayey SILT, Little Coarse Gravel		V	0602.0	Arsenic
	LAY: Light Brown Silty CLAY, Little Coarse Gravel			U0UZ.U	Alseilic

ENSR	Client: Ingersoll Rand	BORING ID:
INTERNATIONAL	Site: Former IR Facility - Phillipsburg, NJ	K06-6/7/05
Start Date:	Project: Farm Area Investigation	Page: 1 of 2
6/7/2005	Coordinates: X-675728.75 Y-306767.71	Depth of Boring: 18.00
End Date:	Elevation: 336.77	Geologist: S. Dolan
6/7/2005	Drill Subcontractor: S&S	Driller: Dave Trans
Depth (tt) Lithology	Description PID Si	Sample ID Sample Parameters



# NOTES:

Coordinates are provided in New Jersey State Plane NAD 1983 Feet. Elevation is provided in feet above mean sea level - NAVD 1988 NR - Not Recorded due to equipment malfunction ppm - parts per million, ppb - parts per billion

INTERNATIONAL	Client: Ingersoll Rand Site: Former IR Facility - Phillipsbur	ra N I	BORIN	IG ID: 06-6/7/05
		ig, ivo		
Start Date: 6/7/2005	Project: Farm Area Investigation		Page: 2 of	
End Date:	Coordinates: X-675728.75 Y-306767.	/1	· ·	oring: 18.00
6/7/2005	Elevation: 336.77  Drill Subcontractor: S&S		Geologist: Driller:	S. Dolan Dave Trans
			Dillei.	Dave Halls
Debty (41) Tithology	Description	PID	Sample ID	Dave Trans Sample Parameters
14 —	SILT: Brown SILT, Some Gravel SILT: Brown SILT, Some Gravel, Little Broken Polomite Clasts	445 ppb		

# NOTES:

Refusal @ 18'

ENCD	Client: Ingersoll Rand			BORIN	IG ID:
INTERNATIONAL	Site: Former IR Facility - Phillipsburg, NJ		K07		
Start Date:	Project: Farm Area Investigation			Page: 1 of	1
5/9/2005	Coordinates: X-675535.55 Y-306810.	03		Depth of B	oring: 2.50
End Date:	Elevation: 336.62			Geologist:	R. Freeman
5/9/2005	Drill Subcontractor: N/A			Driller:	N/A
Debth (4) rithology	Description	PID	Sa	mple ID	Sample Parameters
	SILT: Brown Clayey SILT, Trace Coarse Gravel, Roots organic Matter		K	0700.5	Arsenic
	CLAY: Brown Silty CLAY, Little Coarse Gravel	<u>.</u> 1	K	0701.5	Arsenic
2+	CLAY: Light Brown Silty CLAY, Little Coarse Gravel			0701.0	σστιισ

INTERNATIONAL	Client: Ingersoll Rand Site: Former IR Facility - Phillipsburg, NJ		BORIN <b>L0</b>	
Start Date:	Project: Farm Area Investigation		Page: 1 of	1
5/3/2005	Coordinates: X-679848.33 Y-307485.3	89	Depth of Bo	oring: 2.00
End Date:	Elevation: 360.49		Geologist:	R. Freeman
5/3/2005	Drill Subcontractor: N/A		Driller:	N/A
Depth (ft) Lithology	Description	PID S	ample ID	Sample Parameters
(R ::	LAY: Brown Silty CLAY, Some Organic Matter doots)  LT: Brown Clayey SILT, Some Organic Matter doots), Little Coarse Gravel  LT: Brown Clayey SILT, Some Coarse Gravel, Trace reganic Matter (Roots)		L0101.5	PP Metals, Herbicides, Pesticides

ENSD	Client: Ingersoll Rand		BORIN	
INTERNATIONAL	Site: Former IR Facility - Phillipsbu	e: Former IR Facility - Phillipsburg, NJ		12
Start Date:	Project: Farm Area Investigation		Page: 1 of	1
5/3/2005	Coordinates: X-679892.68 Y-307944.	85	Depth of B	oring: 2.00
End Date:	Elevation: 340.88		Geologist:	R. Freeman
5/3/2005	Drill Subcontractor: N/A		Driller:	N/A
Depth (ft) Lithology	Description	PIDS	ample ID	Sample Parameters
2	CLAY: Brown Silty CLAY, Some Organic Matter (Roots)  SILT: Brown Clayey SILT, Some Coarse Gravel, Little Organic Matter (Roots)  SILT: Brown Clayey SILT, Trace Roots & Coarse Gravel  CLAY: Light-Brown Silty CLAY (Undisturbed)		L0201.5	PP Metals, Herbicides, Pesticides

INTERNATIONAL	Client: Ingersoll Rand Site: Former IR Facility - Phillipsbu	ırg, NJ	BORING <b>L0</b>	
Start Date: 5/3/2005	Project: Farm Area Investigation  Coordinates: X-679326.25 Y-307726.	78	Page: 1 of	1 oring: 1.50
End Date: 5/3/2005	Elevation: 351.79 Drill Subcontractor: N/A		Geologist:	R. Freeman
Depth (tt) Lithology	Description	PID	ample ID	Sample Parameters
	CLAY: Brown Silty CLAY, Some Organic Matter (Roots)  SILT: Brown Clayey SILT, Little Coarse Gravel & Organic Matter (Roots)  SILT: Brown Clayey SILT, Little Coarse Gravel, Trace		_0301.0	PP Metals, Herbicides, Pesticides
	Organic Matter (Roots)  CLAY: Brown Silty CLAY (Undisturbed)			

INTERNATIONAL	Client: Ingersoll Rand Site: Former IR Facility - Phillipsbu	rg, NJ		BORIN <b>L</b> (	
Start Date:	Project: Farm Area Investigation			Page: 1 of	
5/3/2005	Coordinates: X-679496.03 Y-308161.	83		Depth of E	Boring: 1.50
End Date:	Elevation: 339.09			Geologist:	R. Freeman
5/3/2005	Drill Subcontractor: N/A			Driller:	N/A
Debty (41) Tityology	Description	PID	2s	mple ID	Sample Parameters
· _ · _ (I	LAY: Brown Silty CLAY, Some Organic Matter Roots)  // ILT: Light-Brown Clayey SILT, Trace Roots			0401.0	PP Metals, Herbicides,
	LAY: Light-Brown Silty CLAY, Trace Coarse Gravel Jndisturbed)			0.000	Pesticides

ENSR.	Client: Ingersoll Rand	N.I		NG ID:
INTERNATIONAL	Site: Former IR Facility - Phillipsbu	rg, NJ		
Start Date:	Project: Farm Area Investigation		Page: 1 o	f 1
5/3/2005	Coordinates: X-678938.28 Y-307928.	88	Depth of I	Boring: 2.00
End Date:	Elevation: 350.95		Geologist	R. Freeman
5/3/2005	Drill Subcontractor: N/A		Driller:	N/A
Depth (th) Lithology	Description	PID	Sauble ID	Sample Parameters
2 (F	LAY: Brown Silty CLAY, Some Organic Matter Roots)  LAY: Brown Silty CLAY, Little Coarse Gravel & rganic Matter (Roots)  LAY: Light-Brown Silty CLAY, Little Coarse Gravel & rganic Matter (Roots)  LAY: Light-Brown Silty CLAY, Little Coarse Gravel Judisturbed)		L0501.5	PP Metals, Herbicides, Pesticides

ENST.	Client: Ingersoll Rand Site: Former IR Facility - Phillipsbur	rg, NJ		BORIN L(	
Start Date:	Project: Farm Area Investigation			Page: 1 of	†1
5/4/2005	Coordinates: X-679120.1 Y-308356.0	09		Depth of E	Boring: 2.00
End Date:	Elevation: 334.53			Geologist:	R. Freeman
5/4/2005	Drill Subcontractor: N/A			Driller:	N/A
Debty (41) Tithology	Description	PID	Sal	mple ID	Sample Parameters
	LAY: Brown Silty CLAY, Little Organic Matter (Roots) Coarse Gravel				
<u> </u>	ILT: Light-Brown Clayey SILT, Little Coarse Gravel				
	ILT: Light-Brown Clayey SILT, Little Coarse Gravel Jndisturbed)		L	0601.5	PP Metals, Herbicides, Pesticides

ENSR.	Client: Ingersoll Rand Site: Former IR Facility - Phillipsbur	rg, NJ		BORIN	
Start Date:	Project: Farm Area Investigation			Page: 1 of	f 1
5/4/2005	Coordinates: X-678512.62 Y-308078.9	93		Depth of E	Boring: 2.00
End Date:	Elevation: 343.59			Geologist:	R. Freeman
5/4/2005	Drill Subcontractor: N/A			Driller:	N/A
Debty (41) Tithology	Description	PID	Sa	mple ID	Sample Parameters
	SILT: Brown Clayey SILT, Little Coarse Gravel, Roots organic Matter				
	SILT: Brown Clayey SILT, Little Coarse Gravel, Roots Organic Matter		L	0701.5	PP Metals, Herbicides, Pesticides
2—	CLAY: Light-Brown Silty CLAY, Litlte Coarse Gravel	JI			<u> </u>

INTERNATIONAL TO SERVICE TO SERVI	Client: Ingersoll Rand Site: Former IR Facility - Phillipsbu	rg, NJ		BORIN L(	
Start Date:	Project: Farm Area Investigation			Page: 1 of	1
5/4/2005	Coordinates: X-678742.76 Y-308551.	82		Depth of E	Boring: 2.00
End Date:	Elevation: 326.33			Geologist:	R. Freeman
5/4/2005	Drill Subcontractor: N/A			Driller:	N/A
Depth (ft) Lithology	Description	PID	Sal	mple ID	Sample Parameters
	CLAY: Brown Silty CLAY, Some Coarse Gravel, Roots & Organic Matter				
	CLAY: Brown Silty CLAY, Little Coarse Gravel				
	CLAY: Light-Brown Silty CLAY, Litlte Coarse Gravel Undisturbed)		L	0801.5	PP Metals, Herbicides, Pesticides

ENSR.	Client: Ingersoll Rand Site: Former IR Facility - Phillipsburg, NJ	BORING ID:
Start Date:	Project: Farm Area Investigation	Page: 1 of 1
5/4/2005	Coordinates: X-678179.68 Y-308321.07	Depth of Boring: 2.50
End Date:	Elevation: 334.93	Geologist: R. Freeman
5/4/2005	Drill Subcontractor: N/A	Driller: N/A
Depth (th) Lithology	Description PID	Sample ID Sample Parameters
0_	SILT: Brown Clayey SILT, Some Coarse Gravel, Roots & Organic Matter	
	SILT: Brown Clayey SILT, Some Roots & Coarse Gravel	
2+	CLAY: Brown Silty CLAY, Little Coarse Gravel & Roots	L0902.0 PP Metals, Herbicides, Pesticides
	CLAY: Brown Silty CLAY, Little Coarse Gravel (Undisturbed)	

INTERNATIONAL	Client: Ingersoll Rand Site: Former IR Facility - Phillipsbu	ırg, NJ		BORIN	ng id: 10
Start Date:	Project: Farm Area Investigation			Page: 1 o	f 1
5/4/2005	Coordinates: X-678445.05 Y-308821.	.86		Depth of E	Boring: 2.00
End Date:	Elevation: 327.45			Geologist:	R. Freeman
5/4/2005	Drill Subcontractor: N/A			Driller:	N/A
Depth (ft) Lithology	Description	PID	58	mple ID	Sample Parameters
	CLAY: Brown Silty CLAY, Litltle Coarse Gravel, Roots & Organic Matter				
	CLAY: Brown Silty CLAY, Little Coarse Gravel				
	CLAY: Light Brown Silty CLAY, Little Coarse Gravel Undisturbed)		L	1001.5	PP Metals, Herbicides, Pesticides

INTERNATIONAL 20	Client: Ingersoll Rand Site: Former IR Facility - Phillipsbur	rg, NJ		BORIN L1	
Start Date:	Project: Farm Area Investigation			Page: 1 of	1
5/5/2005	Coordinates: X-677442.92 Y-308162.0	04		Depth of E	Boring: 2.00
End Date:	Elevation: 306.02			Geologist:	A. Mosuly
5/5/2005	Drill Subcontractor: N/A			Driller:	N/A
Depth (tt) Lithology	Description	PID	Sal	nple ID	Sample Parameters
&	ILT: Brown Clayey SILT, Little Coarse Gravel, Roots Organic Matter			1101.5	PP Metals, Herbicides,
	LAY: Light Brown Silty CLAY, Little Coarse Gravel Jndisturbed)			U 101.0	Pesticides

INTERNATIONAL	Client: Ingersoll Rand Site: Former IR Facility - Phillipsbur	rg, NJ		BORIN	
Start Date:	Project: Farm Area Investigation			Page: 1 of	f 1
5/4/2005	Coordinates: X-677826.24 Y-308598.7	78		Depth of E	Boring: 2.00
End Date:	Elevation: 327.14			Geologist:	R. Freeman
5/4/2005	Drill Subcontractor: N/A			Driller:	N/A
Depth (tt)	Description	PID	Sa	mple ID	Sample Parameters
	SILT: Brown Clayey SILT, Little Coarse Gravel, Roots & Organic Matter				
· · · · · · · ·	SILT: Brown Clayey SILT, Little Coarse Gravel & Roots				
	CLAY: Light Brown Silty CLAY, Little Coarse Gravel (Undisturbed)		L	1201.5	PP Metals, Herbicides, Pesticides

INTERNATIONAL	Client: Ingersoll Rand Site: Former IR Facility - Phillipsbu	ıra N I		BORIN	
Start Date: 5/5/2005 End Date: 5/5/2005	Project: Farm Area Investigation  Coordinates: X-678137.61 Y-309049  Elevation: 326.30  Drill Subcontractor: N/A			Page: 1 of Depth of E Geologist: Driller:	Boring: 2.00 R. Freeman
Depth (tt) Lithology	Description	PID	Sal	mple ID	Sample Parameters
	SILT: Brown Clayey SILT, Little Coarse Gravel, Roots & Organic Matter				
2	SILT: Brown Clayey SILT, Trace Roots & Organic Matter  CLAY: Light Brown Silty CLAY, Little Coarse Gravel (Undisturbed)		L	1301.5	PP Metals, Herbicides, Pesticides

INTERNATIONAL	Client: Ingersoll Rand  Site: Former IR Facility - Phillipsburg, NJ			BORING ID:		
Start Date:	Project: Farm Area Investigation			Page: 1 of	1	
5/6/2005	Coordinates: X-677037.52 Y-308389	9.38		Depth of E	Boring: 3.00	
End Date:	Elevation: 283.26			Geologist:	A. Mosuly	
5/6/2005	Drill Subcontractor: N/A			Driller:	N/A	
Depth (ft) Lithology	Description	PID	Sal	mple ID	Sample Parameters	
2+	SILT: Brown Clayey SILT, Some Coarse Gravel & Organic Matter (Roots)					
	CLAY: Light Brown Silty CLAY, Litlte Coarse Gravel Undisturbed)		L	1402.5	PP Metals, Herbicides, Pesticides	

INTERNATIONAL	Client: Ingersoll Rand Site: Former IR Facility - Phillips	oll Rand r IR Facility - Phillipsburg, NJ			NG ID: <b>15</b>
Start Date: 5/6/2005	Project: Farm Area Investigation Coordinates: X-677374.94 Y-3089	10.02		Page: 1 of	f 1 Boring: 2.00
End Date: 5/6/2005	Elevation: 277.49 Drill Subcontractor: N/A			Geologist: Driller:	N/A
Depth (tt) Lithology	Description .	PID	Sar	mple ID	Sample Parameters
2	SILT: Brown Clayey SILT, Little Coarse Gravel, Root & Organic Matter  SILT: Brown Clayey SILT, Some Coarse Gravel, Rook & Organic Matter  CLAY: Light-Brown Silty CLAY, Little Coarse Gravel (Undisturbed)		L	1501.5	PP Metals, Herbicides, Pesticides

INTERNATIONAL 80	Client: Ingersoll Rand Site: Former IR Facility - Phillipsbur	g, <b>N</b> J		BORIN	
Start Date:	Project: Farm Area Investigation			Page: 1 of	1
5/4/2005	Coordinates: X-677812.49 Y-309298.0	)2		Depth of B	Boring: 2.00
End Date:	Elevation: 314.02			Geologist:	R. Freeman
5/4/2005	Drill Subcontractor: N/A			Driller:	N/A
Depth (tt) Lithology	Description	PID	Sal	mple ID	Sample Parameters
0	ILT: Brown Clayey SILT, Little Coarse Gravel				
	LAY: Light-Brown Silty CLAY, Little Coarse Gravel Jndisturbed)		L	1601.5	PP Metals, Herbicides, Pesticides

INTERNATIONAL	Client: Ingersoll Rand Site: Former IR Facility - Phillipsburg, NJ	BORING ID:		
Start Date: 5/5/2005	Project: Farm Area Investigation			1
End Date: 5/5/2005	Coordinates: X-676680.49 Y-308183.04  Elevation: 262.31  Drill Subcontractor: N/A		Geologist:  Driller:	NI/A
Debty (41) Titlology	Description PID	58	mple ID	Sample Parameters
2- SI	LT: Brown Clayey SILT, Little Coarse Gravel & rganic Matter  LT: Brown Clayey SILT, Little Coarse Gravel, Roots Organic Matter  LT: Brown Clayey SILT, Little Coarse Gravel & Roots  LT: Brown Clayey SILT, Little Coarse Gravel  LAY: Brown Silty CLAY, Little Coarse Gravel	L	1702.5	PP Metals, Herbicides, Pesticides

ENSR.	Client: Ingersoll Rand		BORING ID:		
INTERNATIONAL	Site: Former IR Facility - Phillipsbu	rg, NJ			
Start Date:	Project: Farm Area Investigation		Page: 1 of 1		
5/5/2005	Coordinates: X-676827.58 Y-308594.	45	Depth of Bo	ring: 2.00	
End Date:	Elevation: 266.56		Geologist:	A. Mosuly	
5/5/2005	Drill Subcontractor: N/A		Driller:	N/A	
Depth (th) Lithology	Description (	PID Sa	mple ID	Sample Parameters	
2 - & - & - & - & - & - & - & - & - & -	LT: Brown Clayey SILT, Some Coarse Gravel, Roots Organic Matter  LT: Brown Clayey SILT, Little Coarse Gravel, Roots Organic Matter  LT: Brown Clayey SILT, Little Coarse Gravel & Roots  LAY: Light-Brown Silty CLAY, Little Coarse Gravel Indistrubed)	L	1801.5	PP Metals, Herbicides, Pesticides	

INTERNATIONAL TO	Client: Ingersoll Rand Site: Former IR Facility - Phillipsbur	rg, NJ		BORIN	
Start Date:	Project: Farm Area Investigation			Page: 1 of	f 1
5/6/2005	Coordinates: X-677246.45 Y-309180.2	28		Depth of E	Boring: 2.00
End Date:	Elevation: 253.67			Geologist:	R. Freeman
5/6/2005	Drill Subcontractor: N/A			Driller:	N/A
Depth (tt) Lithology	Description Description	PID	Sa	mple ID	Sample Parameters
	SILT: Brown Clayey SILT, Little Coarse Gravel, Roots & Organic Matter				
· · · · · · · · · · · · · · · · · · ·	SILT: Brown Clayey SILT, Little Coarse Gravel				
	CLAY: Light-Brown Silty CLAY, Little Coarse Gravel Undisturbed)		L	1901.5	PP Metals, Herbicides, Pesticides

INTERNATIONAL	Client: Ingersoll Rand Site: Former IR Facility - Phillipsb				NG ID: <b>20</b>
Start Date: 5/6/2005 End Date:	Project: <b>Farm Area Investigation</b> Coordinates: X-676396.45 Y-308021  Elevation: 270.67			Geologist:	Boring: 2.00 A. Mosuly
5/6/2005 Depth (ti) Lithology	Drill Subcontractor: N/A  Description	PID	58	Driller:	N/A Sample Parameters
	SILT: Brown Clayey SILT, Some Coarse Gravel, Roots & Organic Matter				
	SILT: Brown Clayey SILT, Little Coarse Gravel, Roots & Organic Matter		L	2001.5	PP Metals, Herbicides, Pesticides
	CLAY: Light-Brown Silty CLAY, Little Coarse Gravel (Undisturbed)		1		

ENCD	Client: Ingersoll Rand			BORIN	NG ID:
INTERNATIONAL	Site: Former IR Facility - Phillipsb	urg, NJ		L <sub>2</sub>	21
Start Date:	Project: Farm Area Investigation			Page: 1 of	f 1
5/6/2005	Coordinates: X-676583.75 Y-308810	0.02		Depth of E	Boring: 2.50
End Date:	Elevation: 232.91			Geologist:	R. Freeman
5/6/2005	Drill Subcontractor: N/A			Driller:	N/A
Debity (III) Tithology	Description .	PID	Sa	mple ID	Sample Parameters
0					
	SILT: Brown Clayey SILT, Some Coarse Gravel & Roots				
	SILT: Brown Clayey SILT, Little Coarse Gravel				
2+	CLAY: Light-Brown Silty CLAY (Undisturbed)	1	L	2102.0	PP Metals, Herbicides, Pesticides

INTERNATIONAL S	Client: Ingersoll Rand Site: Former IR Facility - Phillipsbur	rg, NJ		BORIN	
Start Date:	Project: Farm Area Investigation			Page: 1 of	f 1
5/9/2005	Coordinates: X-675760.04 Y-307335.	31		Depth of E	Boring: 2.00
End Date:	Elevation: 323.08			Geologist:	R. Freeman
5/9/2005	Drill Subcontractor: N/A			Driller:	N/A
Depth (ft) Lithology	Description	PID	58	mple ID	Sample Parameters
	SILT: Brown Clayey SILT, Little Coarse Gravel, Roots & Organic Matter				
<u> </u>	SILT: Brown Clayey SILT, Little Coarse Gravel				
	CLAY: Light-Brown Silty CLAY, Little Coarse Gravel (Undisturbed)		L	2201.5	PP Metals, Herbicides, Pesticides

INTERNATIONAL	Client: Ingersoll Rand Site: Former IR Facility - Phillipsbur	rg, NJ		BORIN	
Start Date:	Project: Farm Area Investigation			Page: 1 of	1
5/9/2005	Coordinates: X-675984.5 Y-307449.2	21		Depth of E	Boring: 2.00
End Date:	Elevation: 318.74			Geologist:	R. Freeman
5/9/2005	Drill Subcontractor: N/A			Driller:	N/A
Debth (41) Tithology	Description	PID	58	mple ID	Sample Parameters
	SILT: Brown Clayey SILT, Little Coarse Gravel, Roots organic Matter				
S S	ILT: Brown Clayey SILT, Little Coarse Gravel				
	CLAY: Light-Brown Silty CLAY, Little Coarse Gravel Undisturbed)		L	2301.5	PP Metals, Herbicides, Pesticides

ENSR	Client: Ingersoll Rand	Client: Ingersoll Rand			BORING ID:		
INTERNATIONAL	Site: Former IR Facility - Phillipsbu	rg, NJ		L2	24		
Start Date:	Project: Farm Area Investigation			Page: 1 of	†1		
5/6/2005	Coordinates: X-676230.29 Y-307586.	04		Depth of E	Boring: 2.00		
End Date:	Elevation: 309.47			Geologist:	R. Freeman		
5/6/2005	Drill Subcontractor: N/A			Driller:	N/A		
Debth (4)	Description	PID	Sar	uble ID	Sample Parameters		
0							
<u> </u>	SILT: Brown Clayey SILT, Little Coarse Gravel & Roots						
	SILT: Brown Clayey SILT, Little Coarse Gravel						
	SILT: Light Brown Clayey SILT, Little Coarse Gravel (Undisturbed)		L2	2401.5	PP Metals, Herbicides, Pesticides		

## **NOTES:**

INTERNATIONAL	Client: Ingersoll Rand Site: Former IR Facility - Phillipsbur	rg, NJ		BORIN	NG ID: <b>25</b>
Start Date:	Project: Farm Area Investigation			Page: 1 of	f 1
5/5/2005	Coordinates: X-675577 Y-307898.7	73		Depth of E	Boring: 2.00
End Date:	Elevation: 283.66			Geologist:	A. Mosuly
5/5/2005	Drill Subcontractor: N/A			Driller:	N/A
Depth (ft) Lithology	Description	PID	Sal	mple ID	Sample Parameters
	LT: Brown Clayey SILT, Little Coarse Gravel, Roots Organic Matter				
SI	LT: Brown Clayey SILT, Little Coarse Gravel & Roots				
	LAY: Light-Brown Silty CLAY, Little Coarse Gravel Indisturbed)			2501.5	PP Metals, Herbicides, Pesticides